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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,836	03/15/2005	Jorg Erich Sorg	12406-110US1 P2002,0768 U	1873
26161	7590	12/01/2005	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			MATTHEWS, COLLEEN ANA	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/527,836

Applicant(s)

SORG, JORG ERICH

Examiner

Colleen A. Matthews

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/15/2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/15/2005</u>   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 5B elements 201a and 201b. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The abstract of the disclosure is objected to because it includes improper language such as "the invention describes" and "said". Correction is required. See MPEP § 608.01(b).

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

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of the following is required: Claim 12 refers to "said recess" in the second line of the claim.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,2,6,7,13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,791,472 to Okikawa et al.
6. Regarding claim 1, Okikawa et al. discloses a lead frame based housing (Fig. 2 element 11) for a surface-mountable electronic component (9), with a lead frame having a front side and a back side and comprising at least two electrical connector strips (4), and an injection-molded or transfer-molded housing base body (11) made from an electrically insulating injection compound and comprising a front portion disposed at the front side of said lead frame and a back wall disposed at the back side of said lead frame, wherein said lead frame comprises at least one injection aperture (5) through which said housing base body is injected onto said lead frame from a back side of said lead frame.
7. Regarding claim 2, Okikawa et al. discloses the injection aperture (5) disposed in one of the electrical connector strips (4).
8. Regarding claim 6, Okikawa et al. discloses a lead frame ribbon (Fig. 3 element 1) comprising at least one housing.

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9. Regarding claim 7, Okikawa et al. discloses the housing comprising at least one chip (9).

10. Claims 13 and 14 recite a method of steps therein, however the claims depend on claim 1 which is an apparatus. Therefore, these claims amount to product by process limitations, which will not be given patentable weight.

"Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-2, 4-6, and 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Pub. No. 2004/0262717 to Arndt et al. in view of JP 11-340403 to Hiroshi.

13. Regarding claim 1, Arndt et al. discloses a lead frame based housing base body (Fig. 4 element 8) for a surface-mountable electronic component (16), with a lead frame having a front side and a back side and comprising at least two electrical

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connector strips (2a,2b), and an injection-molded or transfer-molded housing base body (8) made from an electrically insulating injection compound and comprising a front portion disposed at the front side of said lead frame and a back wall disposed at the back side of said lead frame. Arndt et al. differs from the claimed invention in not disclosing that the lead frame comprises at least one injection aperture (6a,6b) through which said housing base body is injected onto said lead frame from a back side of said lead frame. Hiroshi teaches an injection aperture (5b) through which said housing base body (11) is injected onto said lead frame from a back side of said lead frame. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the holes of Arndt et al. as injection apertures to injection mold the housing body such as the injection molding in Hiroshi. One would have been motivated to make such a modification in order to provide adjustable flow rate control during the housing injection.

14. Regarding claim 2, Arndt et al. discloses the injection apertures (6a, 6b) disposed in the electrical connector strips (2a, 2b).
15. Regarding claim 4, Arndt et al. discloses the housing (8) wherein said housing base body (8) comprises in the front portion a recess (12) for receiving a radiation-emitting or detecting chip (16) and an injection aperture (6a) within the front portion of the housing.
16. Regarding claim 5, Arndt et al. discloses the recess (12) formed in a reflector (Paragraph 17 line 8)

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17. Regarding claim 6, Arndt et al. discloses a lead frame ribbon comprising at least one housing in Figure 5.

18. Regarding claims 7 and 8, Arndt et al. discloses the housing having a chip (16) and where the chip is a radiation-emitting chip (Paragraph 34 line 6).

19. Regarding claim 9, Arndt et al. discloses the chip located on one of the two connector strips (2b) and electrically connected to the second connector strip (2a).

20. Regarding claim 10, Arndt et al. discloses the chip disposed on a mounting area of the base body and electrically connected to each of the connectors strips (2a, 2b) by means of electrical connection lines (17). Arndt et al. also discusses this (Paragraph 34 lines 7-9).

21. Regarding claim 11, Arndt et al. shows the chip (16) mounted on a thermally well-conducting chip carrier (14) leading through the housing base body to the back side and electrically connected to the connector strips (2a, 2b).

22. Regarding claims 12 and 15, Arndt et al. discloses the recess (12) filled with an injection compound that is transparent to radiation emitted by the chip (Paragraph 17 lines 9-10).

23. Claims 13 and 14 recite a method of steps therein, however the claims depend on claim 1 which is an apparatus. Therefore, these claims amount to product by process limitations, which will not be given patentable weight.

"Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-

by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

24. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Pub. No. 2004/0262717 to Arndt et al. in view of JP 11-340403 to Hiroshi as applied to claim 1 above, and further in view of U.S. Pub. No. 2004/0251523 to Takiar.
25. Regarding claim 3, Arndt et al. as discussed above show a lead frame based housing base body (Fig. 4 element 8) for an electrical component (16). However, Arndt et al. do not discuss the thickness of the back wall of the housing (6a, 6b) which claim 3 requires to be less than 0.3 mm and more than 0.0mm. Takiar teaches that an entire electrical component housing thickness is about 0.5-1.5 mm (Paragraph 33 lines 10-12). Takiar's backwall is half the size of the entire housing or smaller, therefore the backwall must be 0.25mm or smaller. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the thickness of the backwall housing of Arndt et al. 0.3mm or smaller as is the small backwall housing of Takiar. One would have been motivated to make such a modification because of the trend for such housings to become smaller in order to be thin and to have a low profile.

#### ***Conclusion***

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



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The following patent and publication are cited to further show the state of the art with respect to lead frame housings in general:

U.S. Pat. No. 4,482,915 to Nishikawa et al. discusses through holes and the injection of resin.


U.S. Pub. No. 2004/0075100 to Bogner et al. discusses lead frames with housings formed via injection molding for radiation-emitting components with electrical connector strips.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colleen A. Matthews whose telephone number is 571-272-1667. The examiner can normally be reached on Monday - Friday 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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